I N D O N E S I A

Year 2, Issue 4
April 2000

CRISIS BULLETIN

Decreasing prevalence of maternal wasting: does it indicate increased access to food?

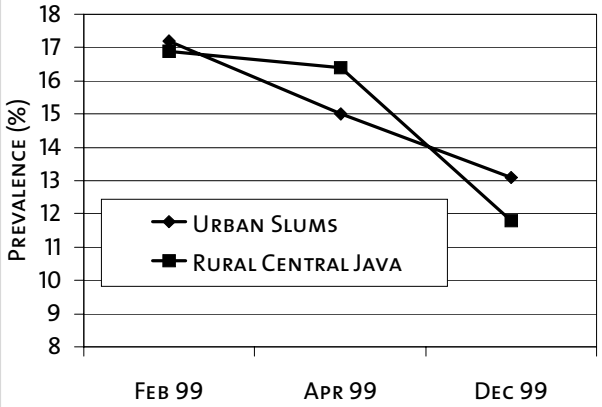
As a result of the economic crisis, malnutrition among women of reproductive age increased significantly in rural Central Java. The crisis reduced household purchasing power and as a result, poor households purchased and consumed food that was inadequate in both calories and micronutrients. Encouragingly, a steady improvement in maternal wasting has been observed from January to December 1999 in the urban slums where the HKI/GOI Nutrition Surveillance System collects data. Maternal BMI appears to be sensitive to changes in food access and is a good indicator to monitor the impact and the recovery of the economic crisis.

The prevalence of wasting (body mass index below 18.5 kg/m^2) among women of reproductive age increased significantly after the onset of the economic crisis in rural Central Java.[1] This change was almost equivalent to the improvements in Southeast Asia that had been achieved over the previous 30 years. Malnutrition among women has serious negative consequences for social and economic development. It can reduce work capacity, increase morbidity and mortality, lower the energy for household and caring activities, reduce the quality of breastmilk and increase pregnancy complications.

Based on the important findings from rural Central Java, women and children's nutritional status has been monitored in slum areas of four cities over the past year as part of the expansion of the NSS.[2] This report presents the findings on wasting (low body mass index and low weight-for-height) among women and children from data collected in Jakarta, Semarang and Surabaya from February to December 1999.

As shown in Figure 1, the prevalence of maternal malnutrition has declined in both rural Central Java and in selected urban slum areas over the past year. The prevalence of maternal malnutrition was similar in rural Central Java and the three urban slums in Feb. 1999, however, the pattern of improvement has been slightly different in rural areas compared to the urban slums. Malnutrition has declined steadily in the urban slums between February and December 1999. In Central Java, there was little decline in the prevalence of low BMI between February 1999

Figure 1. Trends in low body mass index (BMI < 18.5 kg/m^2) among non-pregnant women in rural Central Java and urban slums in three cities[1,2]



[1] Midpoints for the data collection rounds have been plotted: Feb 99 – Jan-Mar 99; Apr 99 – Apr-May 99; Dec 99 – Oct 99-Feb 00.
[2] Differences in prevalence between Feb 99 and Dec 99 are statistically significant for both urban and rural samples (Chi-sq test, p <0.001)

[1] Helen Keller International/Government of Indonesia. *Have 30 years of nutritional improvement in Southeast Asia disappeared in one year of the crisis?* Ind Cris Bul Yr 1, Iss 4, Oct 1998.
[2] Helen Keller International/Government of Indonesia. *Nutrition Surveillance – How does it work?* Ind Cris Bul Yr 2, Iss 2, Feb 2000.

Helen Keller International is a division of Helen Keller Worldwide
The Indonesia Crisis Bulletin *is published by Helen Keller International/Indonesia*

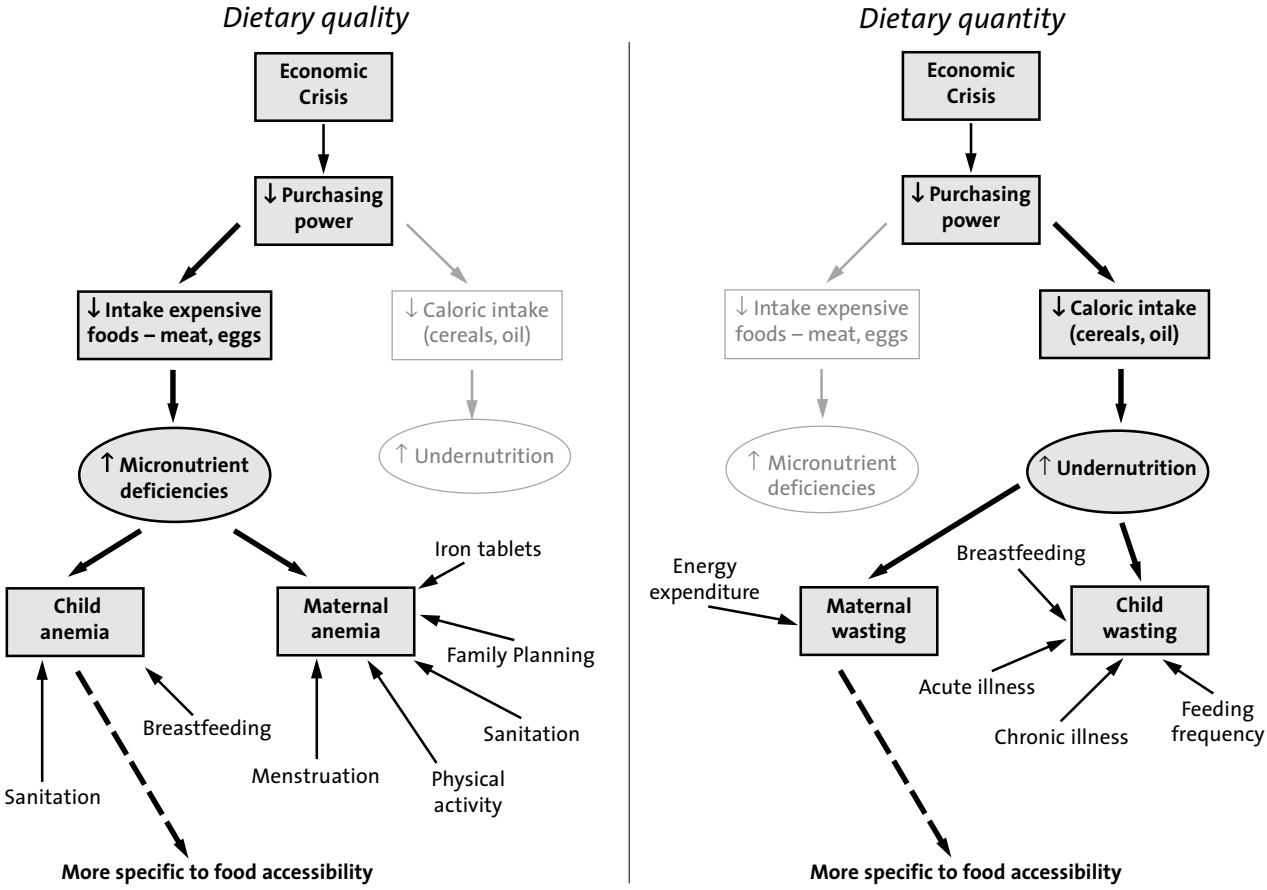
Helen Keller WORLDWIDE

Box 1. Maternal BMI and childhood anemia are sensitive indicators for assessing the impact of accessibility of food

The diagrams below show how the economic crisis in Indonesia has affected both the quality and quantity of household food consumption. When purchasing power is reduced because of the economic crisis, the household will purchase less food. The first consequence of this will be a reduced consumption of relatively luxurious foods, such as animal products and industrially-produced fortified foods, which will increase the prevalence and severity of micronutrient deficiencies. And secondly, the quantity of food available at household level will be reduced. The UNICEF framework (Figure 4) shows how diet and other factors influence malnutrition among women and children. In the March 2000 *Crisis Bulletin*, we reported how childhood anemia appears to be a sensitive, responsive indicator to monitor both decreases and improvements in dietary quality. In this report we share information on changes in dietary quantity.

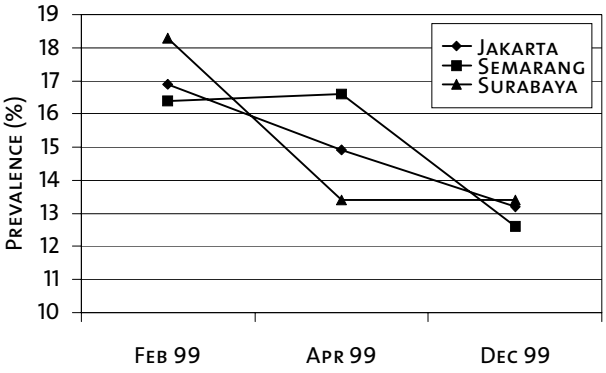
For mothers, the most important immediate cause of a loss in body weight is reduced food intake. Among mothers, as opposed to young children, disease is much less important as an immediate cause of a loss in bodyweight, because the prevalence of disease is relatively low and generally it does not cause a substantial loss of weight. When there is less food available for the household, the mother will first reduce her own food intake before that of her children and her husband. Therefore, she will be the first to lose weight when the household's access to food is reduced. Also, when the household's access to food increases again due to increased purchasing power as a consequence of economic recovery and/or due to crisis relief programs, her bodyweight will increase again.

Thus, because maternal bodyweight is mainly affected by food intake and because mothers will reduce their own food intake before that of other household members, a change of the prevalence of maternal wasting is an early and sensitive indicator for a reduction, but also for an increase, of the access to food at household level. The statement above that wasting among children is not only affected by food intake but also by disease is supported by Figures 3a and 3b. Figure 3a shows changes of the prevalence of wasting among children aged 12-23 months and Figure 3b, for children aged 24-35 months. The pattern of the older children is much more similar to that observed among mothers than that of the younger children, because younger children suffer more from illness than older children and the relative impact of illness on their bodyweight is also larger. Thus, while among mothers and older children, food intake is the main factor associated with weight changes, among younger children, illness is also an important factor.



Adapted from: Bendich A, Deckelbaum RJ (ed.). *Preventive Nutrition Vol II*. Humana Press, New Jersey, 2000. In press.

Figure 2. Trends in low body mass index (BMI < 18.5 kg/m^2) among non-pregnant women in Jakarta, Semarang and Surabaya[1]



[1] Differences in prevalence between Feb 99 and Dec 99 are statistically significant for all three urban slums (Chi-sq test, p <0.001).

and April 1999, but low BMI declined from 16.5% in April 1999 to 11.7% in December 1999.

While BMI is declining overall in the urban slums since February 1999, some differences in the magnitude and pattern of decline was observed between the three slums where NSS data is collected (Figure 2). The prevalence of malnutrition was slightly higher in Surabaya in February 1999, but declined in April 1999 and remained steady at 13.5% in December 1999. The prevalence of low BMI has declined steadily in Jakarta over the past year

Figure 3a. Trends in wasting (weight-for-height < -2 SDs) among children 12-23 months of age in Jakarta, Semarang and Surabaya

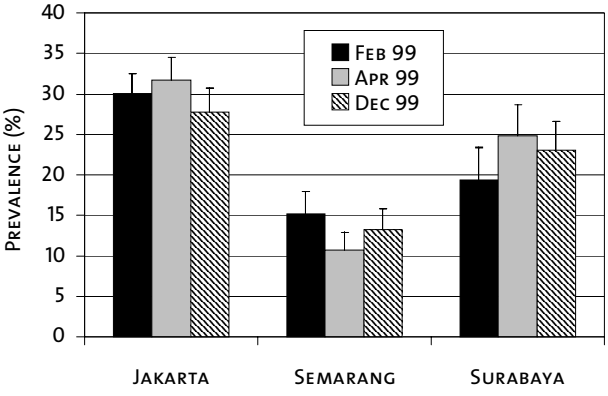


Figure 3b. Trends in wasting (weight-for-height < -2 SDs) among children 24-35 months of age in Jakarta, Semarang and Surabaya

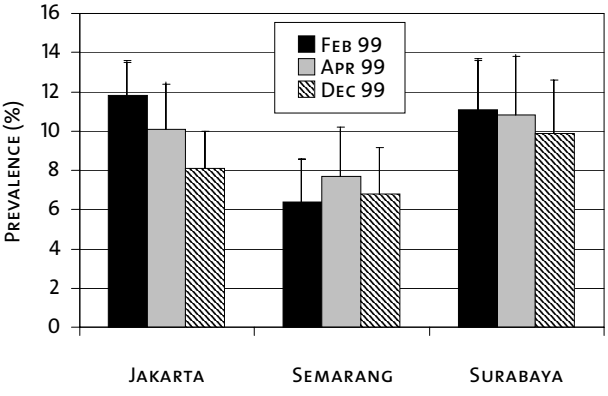
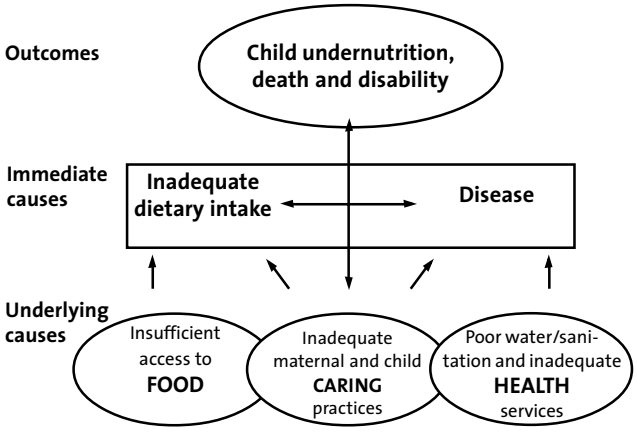


Figure 4. UNICEF conceptual framework for the causes of malnutrition



Source: UNICEF. The State of the World's Children 1998. Oxford: Oxford University Press, 1998.

(decline from 17% to 12.5%). In Semarang, the prevalence of low BMI only started to decline between April 1999 and December 1999. However, the prevalence of low BMI was similar in Jakarta, Semarang and Surabaya in December 1999.

The rates of wasting (weight for height z-score <-2 SDs) among children have also changed over the past year. While the pattern is less clear among children 12-23 months of age (Figure 3a) because of the different factors that influence nutrition in these ages, the trends among children aged 24-35 months are more similar to the patterns among women (Figures 2 and 3b). The prevalence of wasting declined steadily in Jakarta and Surabaya among children aged 24-35 months. Rates of wasting among both age groups are lower in Semarang than Jakarta or Surabaya, but there was little reduction over the past year. Malnutrition in children can impair both physical and cognitive development, therefore the steady decline observed in Jakarta is encouraging. However, the prevalence of wasting is still very high, especially among children aged 12-23 months.

Recommendations

- Maternal BMI appears to be a useful indicator for an impact of the economic crisis as well as recovery and/or relief programs and the NSS should continue to monitor maternal and child nutritional status.
- The information that will be generated should be used to evaluate ongoing programs and to plan future programs, and the data can provide useful insight into the use of anthropometric indicators to monitor crises and development/relief programs.

Helen Keller International
A division of
Helen Keller Worldwide

FOR INFORMATION AND CORRESPONDENCE, CONTACT:

Dr. Dini Latief
Directorate of Community Nutrition
Ministry of Health
Jl. H.R. Rasuna Said
Blok X 5 Kav. 4-9
Jakarta 12950
Indonesia
Tel (62-21) 520-3883
Fax (62-21) 521-0176
E-mail: latieffs@centrin.net.id

Dr. Soewarta Kosen
National Institute for Health
Research & Development
Jl Percetakan Negara No. 23A
Jakarta 10560
Indonesia
Tel (62-21) 424-3314 / 426-1088 ext. 192
Fax (62-21) 421-1845
E-mail: kosen@centrin.net.id

- Dr. Martin W. Bloem
  Regional Director/Country Director
  E-mail: mwbloem@compuserve.com
- Dr. Regina Moench-Pfanner
  Regional Coordinator
  E-mail: remoench@cbn.net.id
- Dr. Saskia de Pee
  Regional Nutrition Research Advisor
  E-mail: sdepee@compuserve.com

Helen Keller International
Asia-Pacific Regional Office
P.O. Box 4338
Jakarta Pusat
Indonesia
Tel (62-21) 719-9163 / 719-8147
Fax (62-21) 719-8148

For general enquiries:
Federico Graciano
E-mail: fgraciano@hki-indonesia.org

- Lynnda Kiess
  Nutrition Surveillance System
  Program Director
  E-mail: lkiess@hki-indonesia.org
- Mayang Sari
  Head of Nutrition
  E-mail: msari@hki-indonesia.org
- Dr. Roy Tjiong
  Deputy Director
  E-mail: rtjiong@hki-indonesia.org

Helen Keller International
Indonesia Country Office
P.O. Box 4338
Jakarta Pusat
Indonesia
Tel (62-21) 719-9163 / 719-8147
Fax (62-21) 719-8148

Projects carried out by HKI-Indonesia in collaboration with the above organizations are funded by the United States Agency for International Development (USAID).

This publication was made possible through support by the Office of Population, Health and Nutrition, USAID/Indonesia Mission, under the terms of Award No. 497-A-00-99-00033-00. The opinions expressed herein are those of the author(s) and do not necessarily reflect the views of the US Agency for International Development.